

A LISTING OF THE CLAIMS

1-41. (canceled)

42. (Previously Presented) A method of treating, preventing or ameliorating a papilloma virus infection in a subject, comprising administering to the subject a composition comprising an oligonucleotide containing at least one unmethylated CpG dinucleotide, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:

5' X₁ X₂CGX₃ X₄ 3'

wherein C and G are unmethylated, wherein X₁X₂ and X₃X₄ are nucleotides, and wherein the composition is administered in an amount sufficient to treat, prevent or ameliorate the papilloma virus infection in the subject, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

43 (Previously Presented) The method of claim 42, wherein the oligonucleotide comprise the sequence 5' TCG 3'.

44. (Withdrawn) The method of claim 43, wherein the nucleic acid molecules comprise the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3' or 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

45. (Withdrawn) The method of claim 44, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-AACGTTCC-3', and 5'-GACGTTCC-3'.

46 (Withdrawn) The method of claim 44, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-TCCATAACGTTCCCTGATGCT-3' (SEQ ID NO:3); 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:7); 5'-

TCCAAGACGTTCTGATGCT-3' (SEQ ID NO:9); 5'-TCCATGACGTTCTGACGTT-3' (SEQ ID NO:10); 5'-TCCATGACGTTCTGATGCT-3' (SEQ ID NO:35) and 5'-TCCATGACGTTCTGATGCT-3' (SEQ ID NO:54):

47. (Previously Presented) The method of claim 42, wherein the subject is a mammal.

48. (Previously Presented) The method of claim 42, wherein administration is at the site of exposure.

49. (Previously Presented) The method of any of claims 42-48, further comprising administering a papilloma virus antigen or vaccine.

50. (Previously Presented) A method of treating, preventing or ameliorating a papilloma virus infection in a subject, comprising administering to the subject a composition comprising an oligonucleotide containing at least one unmethylated CpG dinucleotide, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:

5' X₁ X₂CGX₃ X₄ 3'

wherein C and G are unmethylated, wherein X₁X₂ and X₃X₄ are nucleotides, wherein an antigen of the virus is not administered in conjunction with administration of the composition, and wherein the composition is administered in an amount sufficient to treat, prevent or ameliorate the papilloma virus infection in the subject, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

51. (Previously Presented) The method of claim 50, wherein the oligonucleotide comprise the sequence 5' TCG 3'.

52. (Withdrawn) The method of claim 51, wherein the nucleic acid molecules comprise the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3' or 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

53. (Withdrawn) The method of claim 52, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-AACGTTCC-3', and 5'-GACGTTCC-3'.

54. (Withdrawn) The method of claim 52, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-TCCATAACGTTCCCTGATGCT-3' (SEQ ID NO:3); 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:7); 5'-TCCAAGACGTTCCCTGATGCT-3' (SEQ ID NO:9); 5'-TCCATGACGTTCCCTGACGTT-3' (SEQ ID NO: 10); 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:35) and 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:54).

55. (Previously Presented) The method of claim 50, wherein the subject is a mammal.

56. (Previously Presented) The method of claim 51, wherein administration is at the site of exposure.

57. (Previously Presented) A method of treating, preventing or ameliorating a papilloma virus infection in a subject, comprising administering to the subject a composition comprising an oligonucleotide containing at least one unmethylated CpG dinucleotide, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein $X_1 X_2$ and $X_3 X_4$ are nucleotides, wherein the composition is free of papilloma virus antigen, and wherein the composition is administered in an amount sufficient to treat, prevent or ameliorate the papilloma virus infection in the subject, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate

internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

58. (Previously Presented) The method of claim 57, wherein the oligonucleotide comprise the sequence 5' TCG 3'.

59. (Withdrawn) The method of claim 58, wherein the nucleic acid molecules comprise the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3' or 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

60. (Withdrawn) The method of claim 59, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-AACGTTCC-3', and 5'-GACGTTCC-3'.

61. (Withdrawn) The method of claim 59, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-TCCATAACGTTCCCTGATGCT-3' (SEQ ID NO:3); 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:7); 5'-TCCAAGACGTTCCCTGATGCT-3' (SEQ ID NO:9); 5'-TCCATGACGTTCCCTGACGTT-3' (SEQ ID NO:10); 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:35) and 5'-TCCATGACGTTCCCTGATGCT-3' (SEQ ID NO:54).

62. (Previously Presented) The method of claim 57, wherein the subject is a mammal.

63. (Previously Presented) The method of claim 57, wherein administration is at the site of exposure.

64. (Previously Presented) A method for preventing a symptom of papillomavirus infection in an individual who has been exposed to papillomavirus, comprising administering a composition comprising a oligonucleotide comprising an immunostimulatory sequence to said individual, wherein the ISS comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3', wherein the

oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein $X_1 X_2$ and $X_3 X_4$ are nucleotides, wherein a papillomavirus antigen is not administered in conjunction with administration of said composition, and wherein said composition is administered in an amount sufficient to prevent a symptom of papillomavirus infection, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

65. (Previously Presented) The method of claim 64, wherein the oligonucleotide comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

66. (Previously Presented) The method of claim 64, wherein the individual is a mammal.

67. (Previously Presented) The method of claim 64, wherein administration is at the site of exposure.

68. (Previously Presented) A method of reducing severity of a symptom of papillomavirus infection in an individual infected with papillomavirus, comprising administering a composition comprising a oligonucleotide comprising an immunostimulatory sequence to said individual, wherein the oligonucleotide comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3', wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein $X_1 X_2$ and $X_3 X_4$ are nucleotides wherein a papillomavirus antigen is not administered in conjunction with administration of said composition, and wherein said composition is administered in an amount sufficient to reduce severity of a symptom of papillomavirus infection, wherein the oligonucleotide containing at least one

unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

69. (Previously Presented) The method of claim 68, wherein the oligonucleotide comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

70. (Previously Presented) The method of claim 68, wherein the individual is a mammal.

71. (Previously Presented) The method of claim 68, wherein administration is at a site of infection.

72. (Previously Presented) The method of claim 42, wherein the subject is a human.

73. (Previously Presented) The method of claim 42, wherein the method is a method for treating papilloma virus infection.

74. (Previously Presented) The method of claim 68 wherein the subject is a human.